

USSR

UDC 621.372.413:621.372.8

BATURA, V. G. and MOISEYEV, V. K.

"A Fabry-Perot Resonator for Measuring the Parameters of Dielectrics in a Millimeter Range Within the Temperature Interval of 200-900°K"

Moscow, Priory i Tekhnika Eksperimenta, No 3, May-June 1973, pp 136-138

Abstract: A description is given of the design of a Fabry-Perot resonator with plane reflectors, which is used for measuring the parameters  $\epsilon$  and  $\tan \delta$  of dielectrics in the millimeter range within the temperature interval of 200-900°K. The specimen to be measured is heated or cooled by means of interchangeable thermocryostats that are placed together with the specimen on a movable reflector. This permits simplification of the resonator design, and allows changes of the intrinsic parameters of the measuring system to be decreased within the operational temperature interval. The absence of side walls in the open resonators makes it necessary to provide thermostatic regulation only of the reflector on which the dielectric specimen has been placed. 4 figures. 7 references.

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USSR

UDC: 621.317.373

BATUREVICH, Ye. K., MAYEVSKIY, S. M.

"A Phase Radio Frequency Calibrator"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 71-74 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A320)

Translation: The operating principle of a phase calibrator for the 1-100 MHz frequency range is based on transferring the phase shift given on a fixed low frequency to any frequency in the band by means of an automatic tracking regulation system. A functional block diagram is given and its operation is described. In addition to the master oscillator for the above-mentioned frequency band with attenuators and phase shifters, the calibrator, which utilizes two intermediate frequencies, contains a phase setting device of discrete type based on phase ratios with frequency division.  
E. L.

1/1

USSR

UDC: 621.317.77

MAYEVSKIY, S. M., BATUREVICH, Ye. K., SHPIL'KO, V. N., TKACHENKO, L. F.,  
TROKHIMETS, A. P.

"A Wide-Band Automatic Phase Meter Frequency Converter"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 99-101 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A332)

Translation: To measure phase displacements over a broad frequency range, frequency conversion is used in many phase meters in order to transfer the measured displacement to a fixed low frequency. The authors describe one circuit for this kind of conversion with a frequency shifter as the heterodyne voltage source. Block diagrams are presented, and the properties of the shaper and converter are described. The proposed circuit was used by the authors to transfer measured phase shifts to a frequency of 277 Hz in the frequency band from 500 Hz to 100 kHz. An estimate is given for the phase error when the voltages to be compared are distorted by odd harmonics. Bibliography of one title. E. L.

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USSR

UDC 535.373.1(083.76)

YAKHNIS, G. I., GOVOROVA, R. A., DOVGAN' M. YE., BATURICHEVA,  
Z. B.

"Some Questions of Scintillator Standardization"

Khar'kov, Monokristally, Stsintillyatory i Organicheskiye Lyumino-  
fory -- Sbornik (Monocrystals, Scintillators, and Organic Lumino-  
phores -- Collection of Works), No 5, 1970, pp 302-306 (from  
Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 12,  
1970, Abstract No 12.32.1498)

Translation: In recent years, the area of the employment of scin-  
tillators has expanded considerably. Demands made upon them have  
also increased, particularly with regard to their capacity to  
operate under conditions of the action of various climatic and  
mechanical factors. Standardization of the products should begin  
with the development of basic rules which include a classification  
of the products according to the nature of their employment and  
according to the level of their operational characteristics; jus-  
tified guarantee period; and a technical service life must be  
established. The present article sets forth the results of  
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USSR

YAKHNIS, G. I., et al, Monokristally, Stsintillyatory i Organiches-  
kiye Lyuminofory -- Sbornik, No 5, 1970, pp 302-306

research carried out in this direction. 1 figure, 1 table,  
2 bibliographic entries.

2/2

USSR

UDC 621.777:669.715

~~BATURIN, A. I.~~, SINEL'NIKOV, S. I., MUKHIN, G. G., and NIKIFOROV, L. D.

"Experimental Study of the Temperature Field in a Deformable Volume When Extruding Aluminum Alloys"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 3, Mar 71, pp 6-8

Abstract: This article contains a discussion of the results of an experimental study of the temperature field when extruding an ingot of aluminum alloy by recording temperatures at the melting points of the pure metals, the eutectics, metal compounds, and peritectic mixtures. The essence of the method is use of miniature steel capsules inside which samples of defined shape made of the corresponding sensor metals are placed. The sensor metals are selected so that their melting points are within the investigated extrusion temperature range of 350-500°C with 5-15° intervals.

The procedures used to select the shape and size of the capsules and sensor metals and to determine the melting points of the sensor metals are described. An experiment is described in which several cycles of extruding bars of aluminum alloy on a horizontal 1,500 ton-force press were carried out.

USSR

BATURIN, A. I., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 3, Mar 71, pp 6-8

Experimental isotherms for the temperature distribution with respect to the deformable volume are presented. These isotherms were constructed from the experimental results after analyzing the state of the eutectics in the capsules located at various points in the billet and extrusion product with averaging of all the extrusion cycles. It is pointed out that the method does not permit exact data to be obtained on the actual temperature at a defined point of the deformable volume, but it gives a qualitative representation of the temperature field. The work was carried out under the direction of B. V. ROZANOV, Doctor of Technical Sciences. V. A. SHCHERBATOV participated in the investigation.

2/2

Aluminum and Its Alloys

USSR

UDC: 621.777.22

BATURIN, A.I.

B

"Effect of Technological Parameters on the Dimensions and Form of the Area of Deformation in the Direct Method of Pressing Aluminum Alloys Through a Flat Matrix"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 1, Jan 70, pp 6-8

Abstract: Experimental investigations were made to determine the effect of technological parameters on the actual form of the side boundary of the deformation area in the pressing of aluminum alloys through a flat matrix. Under identical boundary conditions for the case of the pressing of round tubes, studies were conducted of the effects of pressing rate, elongation coefficient, initial billet temperature, and nature of the alloy on the dimensions and form of the area of deformation. In the pressing of tubes the rate of discharge ranges of 2.9-30 m/min (alloy D16) and 2.4-20 m/min (alloy AMg6), changes in the discharge rate had practically no effect on the character of the side boundary of the deformation area which has a spherical appearance. Analysis of data confirmed the spherical form of the deformation area side boundaries and its insignificant change in relation to the elongation coefficient. In the pressing of aluminum alloys the temperatures of the billet and the instrument were sufficiently close; therefore, the



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BATURIN, A.I., Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 1, Jan 70, pp 6-8

temperature field is uniform and has practically no effect on the form of the deformation area side boundary. In the pressing of 41 X 35-mm tubes from 156 X 64 X 320-mm billets made of the alloys AD1, AK6, AMg2, D16, and AMg6 (container temperature, 350° C), it was found that the nature of the alloy does not materially change the dimensions and form of the deformation area.

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Inorganic Compounds

USSR

UDC 551.464.679.1

BATURIN, G. N., and KOCHENOV, A. V., Institute of Oceanology, Academy of Sciences USSR, Moscow

"Uranium in the Interstitial waters of Marine and Oceanic Sediments"

Moscow, Geokhimiya, No 10, Oct 73, pp 1529-1536

Abstract: Data obtained in the investigations of samples collected by USSR oceanographic and marine study vessels in the Atlantic Ocean, Pacific Ocean, and the Black Sea indicated that the content of U in the interstitial waters of the bottom sediments varied in the range from  $1.3 \times 10^{-6}$  to  $650 \times 10^{-6}$  g/l. Among factors which determined the content of U in the interstitial waters were the pH, the Eh, the content of U and the concentration  $C_{org}$  of organic substances in the sediments, and the content of organic substances and of  $CO_2$  in the interstitial waters. The existence of a correlation between the content of U in the interstitial waters and  $C_{org}$  made it possible to assume that a part of the dissolved U was present in the form of organometallic complexes. Presumably U was bound to dissolved or colloiddally dispersed organic compounds of the fulvenic acid type.

1/1

USSR

UDC 629.78.002.3

BELITSKIY, M. Ye., BATURIN, G. T., GAYDARENKO, A. L., GERMANCHUK, F. K.,  
SKRIPKA, V. F.

"Study of the Chemical Stability of Certain Nonmetallic Components of Friction Materials at High Temperatures"

Sb. nauch. tr. Kiyev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works of the Kiev Institute of Civil Aviation Engineers), 1971, No. 2, pp 64-67 (from RZh-41. Raketostroyeniye, No 11, Nov 72, Abstract No 11.41.189)

Translation: Studies of the chemical stability of widely used, promising nonmetallic components and solid lubricants of friction metalloceramic materials are described. Recommendations are made as to their application as high-temperature solid lubricants for friction materials of heavy-load braking devices: boron nitride, 2-calcium fluoride and synthetic mica. 6 ill., 1 table, 7 ref. Resume.

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USSR

BATURIN, Yu. M.

"Some Problems of the Optimization of Complex Computer Systems"

Tr. XVII Nauch. Konf. Mosk. Fiz.-Tekhn. In-ta, 1971. Ser. "Aerofiz. i Prikl. Mat." [Works of Seventeenth Scientific Conference on Moscow Institute of Physics and Technology, 1971. "Aerophysics and Applied Mathematics" Series], Dolgoprudnyy, 1972, pp 1-9 (Translated from Referativnyy Zhurnal Kibernetika No 9, 1973, Abstract No 9V615).

Translation: Problems of the selection of an effective structure and provision of viability of a complex computer system are studied on the example of the system of on-board computers of a spacecraft. The basic quality indicators of the functioning of the computer system used are the indicators of time and accuracy of computer work. Various measures designed to increase these indicators are analyzed: increases in the length of operands and results of computations, redundancy, decreases in time of restoration of functioning. The structure of the computer system for a future spacecraft is defined, as well as the information and logic structure of its control system. Primary conclusions reached are: 1) the computer system should contain three split digital computers; 2) the weight characteristics and power consumption fall within

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Baturin, Yu. M., Tr. XVII Nauch. Konf. Mosk. Fiz.-Tekhn. In-ta, 1971. Ser. "Aerofiz. i Prikl. Mat.", Dolgoprudnyy, 1972, pp 1-9.

permissible limits if they are evaluated on the basis of the corresponding parameters, for example, of the Apollo spacecraft computer.

V. Mikheyev

BATURINA, E.M.

CAUSATION OF A TRAUMATIC

J-9905

501 MILITARY MEDICAL SOCIETY

116

1970

USSR 616,774-001:616,13-004.5

1970

Development of a long-term estimate of a traumatic disease of the brain, combined with cerebral autoregulation.

The symptoms of 224 men -- all inmates of the Great Patriotic War -- has been studied. All these men had suffered severe cerebral concussion when they were from 15 to 30 years of age. These symptoms manifested in the form of epilepsy, asthenia, headache, insomnia, and other disorders, as well as in various degrees of disability. In certain cases, as well as in various degrees of disability, the symptoms of cerebral dysfunction and the degree of the disability -- in 140 persons (55 percent), and in 140 persons (55 percent), a follow-up investigation covering a period of 25 to 27 years (from the time of the concussion to the present), has established that the greatest degree of recovery has been observed in persons with a combination of two types of lesions of the brain: 1) persons with a combination of two types of lesions (9 percent), from 11 to 17 persons (50 percent), and Group I -- persons with two types of lesions (large dense diseases which arose during the long-term period following the trauma of the brain, the first place, in terms of frequency of occurrence, is held by cerebral atrophy). Initial manifestations of such conditions could be observed in 31.1 percent of the cases, a chronic cerebro-vascular insufficiency -- in 45.0 percent of the cases, chronic disturbances of blood circulation in the brain -- in 12.9 percent, and focal lesions -- in 9.9 percent.

Thus, the clinical-anamnestic method of investigation makes it possible to identify the characteristic of a remote period of traumatic cerebral disease and the structure of subsequent morbidity in victims of the Great Patriotic War (Group I).

Received in November 1968.

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--REACTION OF LOWER DIALKYLHYDRAZONES OF ACROLEIN WITH HYDRAZINE AND  
METHYLHYDRAZINE -U-  
AUTHOR-(03)-GOLDIN, G.S., BATURINA, L.S., SHOR, G.S.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (3), 429  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--HYDRAZONE, ALDEHYDE, HYDRAZINE, CONDENSATION REACTION, ORGANIC  
SYNTHESIS, HETEROCYCLIC NITROGEN COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/0854 STEP NO--UR/0409/70/000/003/0429/0429  
CIRC ACCESSION NO--AP0124517  
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124517

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDENSATION OF THE TITLE COMPS.  
IN ETOH AT 75DEGREES 10-15 HR IN THE PRESENCE OF AMMONIUM SALTS GAVE THE  
FOLLOWING I (R, B.P.-MM, AND N PRIME20 SUBD GIVEN): H, 63-4DEGREES 40,  
1.4782; AND ME, 109-10DEGREES-760, 1.4523. FACILITY: GOS.  
NAUCH. ISSLED. INST. KHIM. TEKHNOL. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED



1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--BIOCHEMICAL CHARACTERISTICS OF STANDARD STRAINS OF BACTERIA  
BELONGING TO GENUS CITROBACTER -U-  
AUTHOR--(03)-RAGINSKAYA, V.P., LIFSHITS, M.B., BATURO, A.P.  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6,  
PP 47-50  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--FERMENTATION, BACTERIA, SALOMELLA  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3001/0632 STEP NO--UR/0016/70/000/006/0047/0050  
CIRC ACCESSION NO--AP0126509  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0126509

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PRESENT THE RESULTS OF STUDYING FERMENTING PROPERTIES OF TEST STRAINS OF BACTERIA BELONGING TO GENUS CITROBACTER. THIRTY FIVE SIGNS RECOMMENDED BY THE INTERNATIONAL SUBCOMMITTEE ON ENTEROBACTERIACAE WERE TESTED; THEIR CONFORMITY TO THE TOXONOMIC CHARACTERISTICS OF THE GENUS CITROBACTER WAS ESTABLISHED. IN ASSOCIATION WITH SIMILARITY OF FERMENTING PROPERTIES OF CITROBACTER, SALMONELLA AND ARISGNA BACTERIA A PROPER COMPLEX OF DIFFERENTIAL DIAGNOSTIC TESTS SHOULD BE APPLIED FOR THEIR IDENTIFICATION.

FACILITY: MOSKOVSKIY INSTITUT VAKSIN I SYVOROTOK IM. MECHNIKOVA.

UNCLASSIFIED

USSR

UDC 577:576.851.48+547.963.3

TROITSKIY, N. A., ~~BATURO, V. A.~~, SILKOVA, T. A., and KUDLOVICH, K. G.

"Use of Phosphorus<sup>32</sup> in the Investigation of the Reasons for the Increase in the Number of Recombinants Upon Irradiation of Escherichia coli With Neutrons"


Minsk, Voprosy Genetiki i Selektzii (Aspects of Genetics and Selection),  
"Nauka i Tekhnika," Minsk, 1970, p 302

Abstract: Data concerning the utilization of the radioactive phosphorus isotope for the investigation of the recombination process in Escherichia coli irradiated with intermediate neutrons, and also data on the isolation of DNA from radioactive zygotes, are cited. The assumption is advanced that increase in the frequency of recombinants induced by irradiation of the donor has no connection with the increase in the number of formed merozygotes and is probably the result of intensification of the integration process of the donor genotype in the recipient chromosome of Escherichia coli.

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ANC011124

AUTHOR--

 UR9008  
BATUSHEV, V. A., CANDIDATE OF TECHNICAL SCIENCES,  
DOCENT, ENGINEER-COLONEL, HEAD OF A CHAIR AT THE  
MILITARY COMMUNICATIONS ACADEMY

TITLE--

TO BE AT THE FRONTIERS OF SCIENCE

NEWSPAPER--

KRASNAYA ZVEZDA, JANUARY 1, 1970, P 3, COLS 1-2

ABSTRACT-- THE CHAIR HEADED BY BATUSHEV HAS BEEN INVOLVED IN THE  
DEVELOPMENT OF NEW COURSES. ENGINEER-COLONELS A. PIRYATINSKIY AND  
S. LEVITIN, DOCENTS, PARTICIPATED IN THIS WORK. ENGINEER-CAPTAIN  
K. AKHTYRSKIY, A GRADUATE STUDENT WITH THE CHAIR, IS ABOUT TO  
COMPLETE HIS FIRST RESEARCH PROJECT. ENGINEER-MAJOR V. DYUBKIN AND  
INSTRUCTOR ENGINEER-MAJOR V. TEZIKOV ARE ABOUT TO COMPLETE THEIR  
CANDIDATES WORK.

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PRIMARY SOURCE: FBIS Daily Report, Soviet Union, 9 March 1970, Vol III, Nr 46,  
p D 1

USSR

DISCOVERY OF PI-MESON REPORTED AT DUBNA INSTITUTE

[Editorial Report--L] Moscow SOCIALIST INDUSTRY of 5 March 1970 publishes a report by TASS correspondent A. Vrenyakov entitled "The Discovery of the Secret of Pi-meson." The report describes how, experimenting on a synchrocyclotron at the Dubna Joint Nuclear Research Institute, "Soviet physicists have accomplished the previously unknown transformation of a positive meson into a negative one. The reaction can be reversed from a negative meson to a positive one."

The report continues: "This research by physicists Yu. A. Batusov, S.A. Bunyatov, Y.M. Sidorov, and Y.A. Varha, was examined on 3 March and acknowledged as an outstanding scientific discovery at a session of the USSR Council of Ministers Committee for Inventions and Discoveries."

"The Soviet physicists' discovery," the report continues, "is of enormous theoretical importance. Thus, in the opinion of scientists, with the help of the newly discovered reaction of pi-mesons a search for new atomic nuclei can be conducted."

19741816

AR0040374

Recently, the report says, research scientists have been interested in the possibility of the existence of "multineutron systems" and even of "neutron drops." The Soviet physicists' latest work "has made it possible to investigate this extremely interesting problem under laboratory conditions." The scientists are now investigating the effect of the "double recharging" of pi-mesons. They are being aided in their research by physicists from Bulgaria, Mongolia, and Romania.

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19741817

USSR

UDC 612.822.3.08

BATUYEV, A. S., VASILEVSKIY, N. N., ZIMENKO, N. V., TAIROV, O. P., and KARANYAN, I. A., Laboratory of the Physiology of the Motor Analysor, Physiological Institute imeni A. A. Ukhtomskiy, Leningrad University, and Department of Ecological Physiology, Institute of Experimental Medicine, Academy of Medical Sciences USSR

"A Simple Method of Recording Cerebral Neuronal Activity in Alert Animals"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 11, 1972, pp 1774-1776

Abstract: In preliminary surgery performed on the anesthetized animal, the head is held in a standard stereotaxic apparatus, the frontal bones (if the frontal cerebral lobes are to be investigated) are opened and the periosteum is removed, two screws are firmly implanted in each temporal bone, and the edges of the wounds are sealed with protacrylon. Penicillin is administered, and a certain period is allowed for recovery from surgery. Prior to the actual experiments, the animal is trained for several days to become accustomed to the motionless position in the modified stereotaxic instrument SEZh-1 or SEZh-2. During the test, the head is affixed to the stereotaxic instrument by means of the implanted screws. Holes are drilled in the frontal bones (painless

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BATUYEV, A. S., et al., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 11, 1972, pp 1774-1776

because of absence of periosteum), a local anesthetic is applied to the dura mater, the meninges are pierced, the recording electrode is inserted into the brain (with one of the implanted screws serving as the indifferent electrode), and the edges of the wound are covered with warm vaseline or agar. After completion of the test and withdrawal of the electrode, the opening is sealed with wax or dental cement. If proper antiseptic measures are taken, one chronic animal can be used for over 2 months, with three experiments performed each week.

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USSR

BATUYEV, A. S.,

Funktsii Dvigatel'nogo Analizatora (Functions of the Motor Analysor), Leningrad, Izdatel'stvo Leningradskogo Universiteta, November 1970, 224 pp

Translation: Annotation: This monograph reports results of original research and literature data on characteristics of the activity of one of the most complex cerebral systems — the motor analysor. The motor analysor is defined as self-regulating systems and it is shown that the functions of this analysor are considerably more extensive than was previously supposed. Properties of the motor analysor as a collector of various types of information and as one of the most important apparatuses integrating information are presented. The development of corresponding mechanisms in the evolutionary process of mammals is examined. Analyses are made of the mechanisms of the substitute function of the motor analysor after exhaustion of the remote sensing apparatus and of the labyrinths.

The book is designed for biologists, physiologists, psychologists, neurocyberneticists, and other specialists who study the problems associated with brain activity.

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USSR

BATUYEV, A. S., Funktsii Dvigatel'nogo Analizatora, Leningrad, Izdatel'stvo Leningradskogo Universiteta, November 1970, 224 pp

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BATUYEV, A. S., Funktsii Dvigatel'nogo Analizatora, Leningrad, Izdatel'stvo Leningradskogo Universiteta, November 1970, 224 pp

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APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R002200310020-1"

USSR

BATUYEV, A. S., Funktsii dvigatel'nogo analizatora (Functions of the Motor Analysor), Leningrad, Izdatel'stvo Leningradskogo universiteta, 1970, 224 pp

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The book is meant for biologists, physiologists, psychologists, neurocyberneticists, and for representatives of other specialties investigating the problems associated with the work of the brain.

USSR

UDC 612.822.3.08

BATUYEV, A. S., VASILEVSKIY, N. N., ZIMENKO, N. V., TAIROV, O. P., and KARANYAN, L. A., Laboratory of the Physiology of the Motor Analysor, Physiological Institute imeni A. A. Ukhtomskiy, Leningrad University, and Department of Ecological Physiology, Institute of Experimental Medicine, Academy of Medical Sciences USSR

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BATUYEV, A. S., et al., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov,  
Vol 58, No 11, 1972, pp 1774-1776

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USSR

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USSR

BATUYEV, A. S., Funktsii Dvigatel'nogo Analizatora, Leningrad, Izdatel'stvo Leningradskogo Universiteta, November 1970, 224 pp

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USSR

BATUYEV, A. S., Funktsii Dvigatel'nogo Analizatora, Leningrad, Izdatel'stvo Leningradskogo Universiteta, November 1970, 224 pp

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USSR

BATUYEV, A. S., Funktsii dvigatel'nogo analizatora (Functions of the Motor Analyzor), Leningrad, Izdatel'stvo Leningradskogo universiteta, 1970, 224 pp

Translation: This monograph gives an account of original research and literature data on the characteristics of the activity of one of the most complex cerebral systems, the motor analyzor. The motor analyzor is defined as a self-regulatory system, and it is shown that the functions of this analyzor are far more widespread than was previously thought. The properties of the motor analyzor are examined as a collector of various types of information and as one of the most important devices for information integration. The development of homologous mechanisms in the process of mammalian evolution is also studied. An analysis is made of the substitute function of the motor analyzor following the loss of remote receptors and labyrinths.

The book is meant for biologists, physiologists, psychologists, neurocyberneticists, and for representatives of other specialties investigating the problems associated with the work of the brain.

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USSR

BATUYEV, A. S., and KUKUYEV, L. A., Department of Physiology of Higher Nervous Activity, Leningrad State University, and Brain Institute, Academy of Medical Sciences USSR

"The Motor Analysor and Its Place Among the Other Analysors"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, Vol 20, No 6, 1970, pp 1,115-1,122

Abstract: It is evident from the research of recent years, here reviewed, that the brain structures connected with the motor analysor are exceptionally complex, both because of the variety of afferent and efferent pathways involved in voluntary movements, and because of the activity of the entire cerebral cortex, i.e., the entire set of analysors. Another important factor is the overlapping of the cortical nuclei of the motor analysor with those of the cutaneous, visual, and acoustic analysors. The resulting "intermediate zones" contain projections of the activity of each individual analysor as well as of the combined activity of several analysors which are responsible for the functioning of the "specifically human" cortical formations. Thus, the motor analysor occupies a special place among the nervous

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USSR

BATUYEV, A. S., and KUKUYEV, L. A., Zhurnal Vysshey Nervnoy Deyatel'nosti,  
Vol 20, No 6, 1970, pp 1.115-1,122

receptors in that it integrates not only proprioceptive impulses but also  
information from the other receptors, thereby enabling them to function  
with maximum efficiency.

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1/2 024  
UNCLASSIFIED  
TITLE--THE NEUROCHEMICAL ANALYSIS OF THE PRIMARY RESPONSE TO FLASH  
STIMULATION IN CATS UNDER NEMBUTAL ANESTHESIA -U-  
AUTHOR--(02)--BATUYEV, A.S., PIROGOV, A.A.  
COUNTRY OF INFO--USSR  
SOURCE--FIZIOLOGICHESKIY ZHURNAL SSSR IMENI I. M. SECHENOVA, 1970, VOL 56,  
NR 3, PP 297-304  
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SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BRAIN, ANESTHESIA, BARBITURATE, NEURAL TRANSMISSION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1982/1614  
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CIRC ACCESSION NO--AP0052809  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0052809

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHEMICAL ORGANIZATION OF THE CORTICAL ELEMENTS PARTICIPATING IN THE GENESIS OF PRIMARY RESPONSE (PR) WAS STUDIED WITH APPLICATION OF DIFFERENT SUBSTANCES ON THE BRAIN SURFACE. DIFFERENT APPLICATION EFFECTS WERE REVEALED: DIMINUTION (KCL, NEMBUTAL) AND INCREASE (CHLORALOSE, ESERIN, ATROPIN) OF BOTH PR PHASES, THEIR DIFFERENTLY DIRECTED CHANGES (STRICHNIN, GABA), AFFECTING OF THE FIRST POSTIVIE PR PHASE ONLY (ADRENALIN, AMINAZINE). THE APPLICATION EFFECT OF ESERIN, ATROPIN AND CHLORALOSE INVOLVED RATHER THE FIRST PR PHASE CHANGE THAN THE NEGATIVE ONE. IT SEEMED REASONABLE TO SUGGEST THAT BOTH PR PHASES WERE GENERATED IN THE SURFACE CORTICAL LAYERS AND REFLECTED THE ACTIVATION OF BOTH INHIBITORY AND EXCITATORY CORTICAL ELEMENTS.

FACILITY: THE LENINGRAD STATE UNIVERSITY, LENINGRAD.

UNCLASSIFIED

173 023  
UNCLASSIFIED  
TITLE—THE EVOLUTION OF THE BRAIN FRONTAL LOBES IN MAMMALS AND THE  
PHYSIOLOGICAL BASIS OF THEIR PATHOLOGY IN HUMANS —U—  
AUTHOR—BATUYEV, A.S.  
COUNTRY OF INFO—USSR  
SOURCE—ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,  
VOL 70, NR 6, PP 847-852  
DATE PUBLISHED—70

SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS—BRAIN, CENTRAL NERVOUS SYSTEM, HUMAN PHYSIOLOGY

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED  
PROXY REEL/FRAE—3001/0238

STEP NO—UR/0246/70/070/006/0847/0852

AP0126016 UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126016

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF EXPERIMENTAL STUDIES AND CLINICAL FACTS THE AUTHOR DISCUSSES THE POSSIBILITY OF A CONNECTION OF THE MORPHOLOGICAL EVOLUTION OF THE ANTERIOR PARTS OF THE BRAIN CORTEX WITH THE PERFECTION OF THE MECHANISMS OF INTRAANALYZING INTEGRATION. THE MAIN PHASES IN THE EVOLUTION OF THE FUNCTIONAL ROLE OF THE CORTICAL LOBE AREA IN THE WHOLE BRAIN ACTIVITY IS BEING DIFFERENTIATED. THE RODENTS ARE CHARACTERIZED BY A WEAK STRUCTURAL AND FUNCTIONAL SPECIALIZATION OF THE CORTICAL HEMISPHERES AND A RELATIVELY LOW LEVEL OF ANALYTICO SYNTHETICAL ACTIVITY. BEASTS OF PREY ARE CHARACTERIZED BY A RELATIVELY HIGHER ORGANIZATION OF THE CORTEX AND THE THALAMIC SYSTEM. THE FORMATION OF NUCLEI ANALYZERS AND ASSOCIATIVE ZONES (FRONTAL AND PARIETAL) LEAD TO A QUALITATIVELY NEW TYPE OF ANALYZER INTERACTION, WHICH IS THE BASIS FOR A PRELIMINARY UNITY OF SIGNAL STIMULI WITH SOMATICAL AND VISCERAL EFFERENT SYSTEMS. THE MOST IMPORTANT STRUCTURE FOR SUCH INTEGRATIONS ARE THE CORTICAL ZONES OF THE MOTOR ANALYZERS, INTO WHICH THE YOUNGEST STRUCTURES ARE INCLUDED TOGETHER WITH THE FRONTAL FIELDS. IN PRIMATES ALONG WITH A SUBSEQUENT FUNCTIONAL SPECIALIZATION OF THE NUCLEAR ZONES IN MOTOR ANALYZERS, THE SPECIFIC WEIGHT OF THE FRONTAL FIELDS IN THE PERFECTION OF THE MECHANISMS OF MOTOR COORDINATION INCREASES SIGNIFICANTLY. FOCAL LESIONS OF THE FRONTAL LOBE IN HUMANS LEAD TO DISORDERS OF THE ASSOCIATIVE BRAIN ACTIVITY, AND THE REGULATION OF THE PROPERTIES OF THE NERVOUS PROCESS AND HABITS OF SOCIAL BEHAVIOUR. CONTRARY TO THIS LESIONS OF THE PREMOTOR ZONES OF THE MOTOR ANALYZER ARE NOT ACCOMPANIED BY SUCH SYMPTOMS.

UNCLASSIFIED



3/3 023 UNCLASSIFIED PROCESSING DATE--30OCT70  
CIRC ACCESSION NO--AP0126016  
ABSTRACT/EXTRACT--IT IS QUITE LIKELY THAT IN PRIMATES, AND ALL THE MORE SO  
IN HUMANS, THE FRONTAL FIELDS OF THE CORTEX WITH THEIR DIVERSE FUNCTIONS  
ARE MOST IMPORTANT AS INDEPENDENT INTEGRATIVE SYSTEMS OF THE BRAIN.  
FACILITY: KAFEDRA FIZIOLOGII VYSHEY NERVONNY DEYATEL'NOSTI,  
LENINGRADSKOGO UNIVERSITETA.

UNCLASSIFIED

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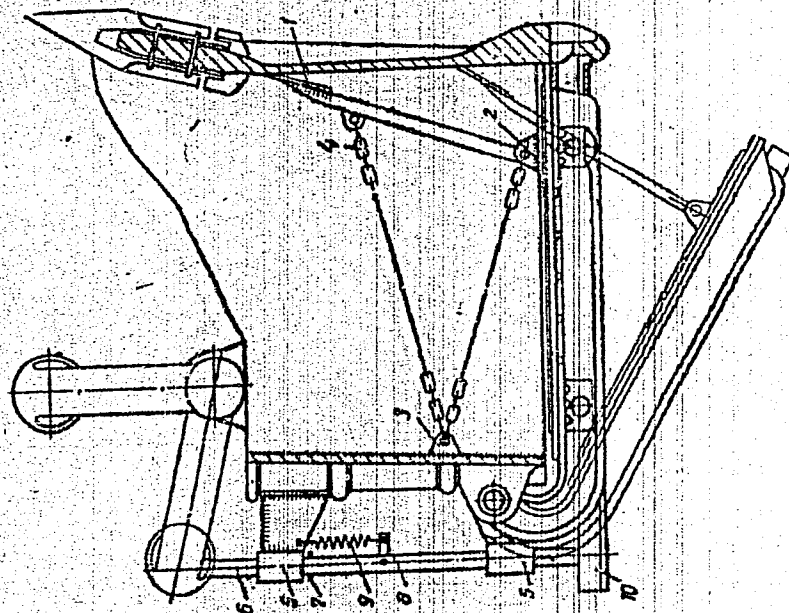
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Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 2-70

244214 EXCAVATOR BUCKET has scraper 1 inside the  
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adhesion into the bucket.

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Bul. 17/14.5.69. Class 84d, Int. Cl. E 02f.

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AA0046261



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19781380

USSR

UDC 002.513.5:676.815

KARELIN, B. V., and BATUYEV, S. N.

"Study of Uniterm-Card-Type Information Media"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1, Organizatsiya i Metodika Informatsionnoy Raboty, No 5, 1972, pp 18-20

Abstract: The article describes a new method of recording numbers of documents on uniterm cards which cuts down on card area and number comparison time. The Scientific Research Institute of Control Machines and Systems compared this method with M. TAUBE's method in an experiment involving the use of descriptor language. The results indicate a time saving of 12-28 percent and a card area reduction of 6-18 percent. The method is being used in the instrument-manufacture sectorial information-retrieval system "Referat" (Abstract).

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1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--SPECTROSCOPIC PROPERTIES OF ND PRIME<sup>3</sup> POSITIVE LUMINESCENCE CENTERS  
IN STANNIC CHLORIDE PHOSPHORYL CHLORIDE -U-  
AUTHOR--(03)-TOLSTOY, M.N., LYUBIMOV, YE.I., BATYAYEV, I.M.  
COUNTRY OF INFO--USSR  
SOURCE--OPT. SPEKTROSK. 1970, 28(4), 722-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--SPECTROSCOPY, CHLORIDE, LUMINESCENCE SPECTRUM, TIN COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/1719 STEP NO--UR/0051/70/028/004/0722/0727  
CIRC ACCESSION NO--AP0125340  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

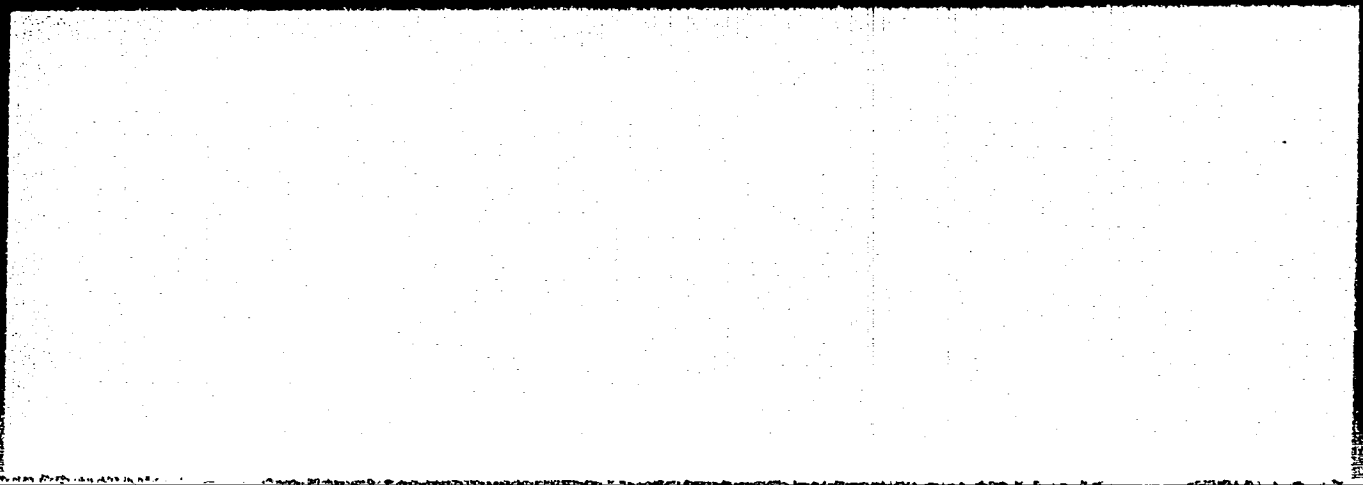
CIRC ACCESSION NO--AP0125340

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTROSCOPIC CHARACTERISTICS OF NO PRIME3 POSITIVE SOLNS. IN SNCL SUB4-POCL SUB3 ( IN GENERAL, SNCL SUB4:POCL SUB3 EQUALS 1"10) WERE INVESTIGATED AS ABSORPTION SPECTRA IN THE RANGE OF 0.4-2.5 MU AND AS LUMINESCENCE SPECTRA IN THE RANGE 0.8-2.0 MU. THE SPECTRAL PROPERTIES DEPENDED WEAKLY ON THE COMPONENT RATIO BETWEEN SNCL SUB4 AND POCL SUB3. BOTH TYPES OF SPECTRA WERE STUDIED IN THE FROZEN SOLNS. AT 77 AND 4.2DEGREE SK. A DEPENDENCE OF THE RELATIVE INTENSITY AND LINE WIDTH ON THE FREEZING REGIME WAS OBSO. THE RESULTS ARE INTERPRETED ON THE BASIS OF THE EXISTENCE OF COMPLEX NO COMPOS. IN SOLN. SEVERAL TYPES OF LUMINESCENCE CENTERS ARE PRESENT, CONNECTED WITH EACH OTHER THROUGH NONRADIATIVE INTERACTION.

UNCLASSIFIED

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1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--THE NEUROCHEMICAL ANALYSIS OF THE PRIMARY RESPONSE TO FLASH  
STIMULATION IN CATS UNDER NEMBUTAL ANESTHESIA -U-  
AUTHOR-(02)-BATUYEV, A.S., PIROGOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHESKIY Sbornik SSSR IMENI I. M. SECHENOVA, 1970, VOL 56,  
NR 3. PP 297-304

DATE PUBLISHED

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CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
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STEP NO--UR/0239/T07036/000/0237/000

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CIRC ACCESSION NO--AP0052809

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FACILITY: THE LENINGRAD STATE UNIVERSITY, LENINGRAD.

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AUTHOR--BATUYEV, A.S.  
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CIRC ACCESSION NG--AP0126016

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Bul. 17/14.5.69. Class 84d, Int. Cl. E 02f.

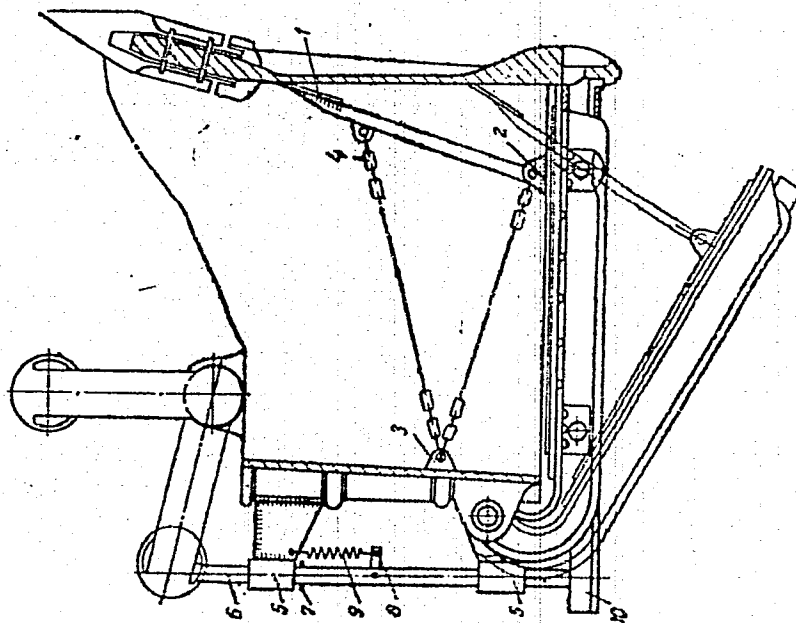
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UDC 002.513.5:676.815

KARELIN, B. V., and BATUYEV, S. N.

"Study of Uniterm-Card-Type Information Media"

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CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/1719 STEP NO--UR/0051/70/028/004/0722/0727  
CIRC ACCESSION NO--AP0125340  
UNCLASSIFIED



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UNCLASSIFIED

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CIRC ACCESSION NO--AP0125340

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UNCLASSIFIED

T/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--DESTRUCTIVE HYDROGENATION OF TRIALKYLACYLOXYSILANES -U-  
AUTHOR--(05)-BOLOTOV, B.A., ORLOVA, T.V., KHARITONOV, N.P., SHENBERG, N.N.,  
BATYAYEV, YE.A.  
COUNTRY OF INFO--USSR  
SOURCE--Zh. OBSHC. KHIM. 1970, 40(4), 823-7  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--HYDROGENATION, ORGANIC SILANE, METAL CATALYST, CARBOXYL  
RADICAL, NICKEL, CHROMIUM OXIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3002/1161 STEP NO--UR/0079/70/040/004/0823/0827  
CIRC ACCESSION NO--AP0128583  
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70  
 CIRC ACCESSION NO--AP0128583  
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROGENOLYSIS OF R SUB3 SIO SUB2  
 CR PRIME1 WITH R SELECTED FROM ME, ET OR PR AND R PRIME1 FROM ET, PR,  
 BU, C SUB5 H SUB11 OR C SUB6 H SUB13, AT 200-300DEGREES 20-250 ATM OVER  
 RANEY NI OR NI-CR OXIDE CATALYSTS OCCURS AT THE C-O BOND WITH  
 TRANSFORMATION OCCURRING MAINLY AT THE CARBOXYL GROUP. THE DISILOXANE  
 PRODUCT IS FORMED BY DEHYDRATION OF THE RESULTING R SUB3 SIOH IN CONTACT  
 WITH THE ACID. THE PRIMARY ALC. AND CARBOXYLIC ACID FORMED IN SUCH  
 TRANSFORMATIONS ALSO REACT TO FORM THE APPROPRIATE ESTER. SATD.  
 HYDROCARBONS ARE ALSO FORMED, OWING TO CATALYTIC CONVERSIONS OF THE  
 ALCs. AND ACIDS OVER NI CATALYST AT SIMILAR TO 300DEGREES. THE REACTION  
 ALSO GAVE SOME CO, CO SUB2, CH SUB4 AND VARIOUS UNIDENTIFIED OR TARRY  
 PRODUCTS. RESULTS OF MANY RUNS WERE TABULATED. THUS THE PRODUCTS  
 INCLUDED R PRIME1 H, R PRIME1 CH SUB2 OH, R PRIME1 CO SUB2 H, R PRIME2  
 CO SUB2 CH SUB2 R PRIME1 AND (R SUB3 SI) SUB2 O. FACILITY:  
 LENINGRAD. GDS. UNIV., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 547.341'139.81+547.391

PUDOVIK, A. N., BATYEVA, E. S., NESTERENKO, V. D., and ANOSHINA, N. P.

"Reaction of Analides of Dialkyl Phosphorous and Diaryl Phosphonous Acids with *p*-Quinones"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 32-37

Abstract: In continuation of the study of the reactions of acid amides of trivalent phosphorous with compounds containing an activated carbonyl group [A. N. Pudovik, et al., Izv. AN SSSR, Ser. Khim., 510, 1972], a study was made of the reactions of analides of dialkyl phosphorous and diaryl phosphonous acids with different substituted and unsubstituted *p*-quinones and *p*-naphthoquinone. The amides of dialkylphosphorous and diaryl phosphonous acids react with *p*-quinones with the formation of O,O-dialkyl-O-*p*-hydroxy aryl-*p*-arylinido phosphates and phosphinates. The O,O-dialkyl-O-*p*-hydroxyaryl-N-arylinido phosphates are subjected to thermal regrouping into O-alkyl-O-*p*-alkoxyaryl-N-arylamido phosphates.

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1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--CONDITIONS FOR SOIL NUTRITION OF PLANTS IN M SUB1 AND VARIATIONS IN  
M SUB2 DURING THE TREATMENT OF BARLEY SEEDS WITH GAMMA RAYS AND SOME  
AUTHOR--(02)-BATYGIN, N.F., PITIRIMOVA, M.A.

COUNTRY OF INFO--USSR

SOURCE--GENETIKA 1970, 6(2), 34-9

DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PLANT PHYSIOLOGY, NUTRITION, CEREAL CROP, SOIL, GAMMA  
IRRADIATION, MUTAGEN, PLANT MUTATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0639

STEP NO--UR/0473/70/006/002/0034/0039

CIRC ACCESSION NO--AP0121306

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PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121306

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BARLEY SEEDS WERE TREATED WITH MUTAGENS OR IRRADIATED WITH GAMMA RAYS AND GROWN ON A FIELD FERTILIZED WITH N PLUS P PLUS K (50, 65, AND 62 OR 250-300, 190, AND 185 KG-HA, RESP.). CHLOROPHYLL, PHYSIOL., STERILE, AND MORPHOL. MUTATIONS WERE COUNTED IN PLANTS OF 2 GENERATIONS. THE VIABILITY OF THE SEEDS AND THE NO. OF STERILE PLANTS WERE LESS UNDER EXCESSIVE NUTRITION. EXCESSIVE NUTRITION ATTENUATED THE EFFECT OF CHEM. MUTAGENS AND GAMMA IRRADIATION IN THE YEAR OF TREATMENT AND DECREASE THE NO. OF MUTATIONS IN THE SUBSEQUENT GENERATION. FACILITY: AGROPHYS. RES. INST., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.385.632.12.032

BATYGIN, V.N., YEFIMOVA, N.V., INOZEMTSEVA, A.V., MAZUROVA, L.G.

"Volumetric Absorbers For Power TWTs"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 11, pp 95-102 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A186)

Translation: The absorber of microwave energy developed for a power traveling-wave tube is characterized by high mechanical stability, good thermal conductivity, and low gas generation. The construction is described of a volumetric absorber for a TWT with a spiral-type delay system. It is shown that damping and matching with the delay system of such an absorber is not worse than with a film absorber obtained by the method of pyrolysis of methane. The absorber makes it possible to dissipate large levels of average power. A volumetric absorber with a delay system of the coupled resonators type is also investigated and its high-frequency characteristics are presented. 3 ref. Summary.

1/1

S/019/61/000/012/025/121  
A152/A128

**AUTHORS:** Puzyrev, E.I., and Batygin, V.N.

**TITLE:** An airtight steatitic ceramic material

**PERIODICAL:** Byulleten' izobreteniy, no. 12, 1961, 26

**TEXT:** Class 21c, 201. No. 138981 (646628/26 of December 8, 1959).  
A talc-base airtight steatitic ceramic material differing from others in that to obtain small dielectric permeability and high mechanical strength in relation to static flexure, the composition thereof is supplemented with amorphous quartz, Alundum and calcium carbonate.

Card 1/1



USSR

UDC 621.039.50

TAKIBAYEV, ZH. S. and IBRAGIMOV, SH. SH., Members of the Academy of Sciences  
Kazakh SSR, ~~PATYBREP KOV, G. A.~~ and OKOLOVICH, V. N., Candidates of Physico-  
Mathematical Sciences

"The Modernized VVR-K Reactor and Its Contribution to the National Economy  
of Kazakhstan"

Alma-Ata, Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 15-26

Abstract: The VVR-K nuclear research reactor was put in operation in 1967.  
The modernization of the reactor core, control system, and safety devices  
resulted in:

1. Creation of 140-mm-diameter channel in the center of the core with a  
neutron flux of  $3 \times 10^{14}$  neutron/cm<sup>2</sup> x sec.

2. Increase of reactivity reserve which allows tests to continue for  
1.5-2 months without shutdown.

The following research work has been conducted:

1. Determination of neutron-physics characteristics.

2. Research on radiation physics and chemistry. The effect of nuclear  
radiation on properties of absorbents and catalysts was investigated.

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USSR

TAKIBAYEV, ZH. S., et al., Vestnik Akademii Nauk Kazakhskoy SSR, No 2 (322), 1972, pp 15-26

3. Nuclear physics research. Nuclear and gamma-resonant scattering with short-life isotopes was investigated.

4. Activation analysis and production of isotopes.

The following research work is proposed for the future:

1. Effect of radiation on materials and processes. Radiation causes an increase of strength of many metals. Examples are given.

2. Use of radiation and radioactive isotopes in the national economy of Kazakhstan. About 90 isotopes used in USSR are obtained by radiation in the reactors. Radioactive method is the most sensitive for detecting impurities in materials.

3. Nuclear physics.

2/2

USSR

UDC: 539.4.62-23

BATYREV, G. R., KAYBYSHEVA, G. A., Engineers

"Reasons for Embrittlement of Type 20KhMFBR Steel"

Moscow, Teploenergetika, No 4, Apr 72, pp 70-72.

Abstract: Five commercial melts of type 20KhMFBR steel were studied to determine the reasons for observed inconsistent low impact toughness. The specimens used were rolled bars 95 mm in diameter. The chemical composition of all melts studied was within the limits for the type. Following simultaneous heat treatment, the short-term mechanical properties of the melts were found to be significantly different. It was found that the austenite grain dimensions differed significantly from melt to melt, apparently resulting from the fact that the temperature interval of intensive austenite grain growth is quite near the recommended normalization temperature. Enlargement of the austenite grain during normalization increases the cold shortness threshold of the steel and may cause some decrease in strength and ductility characteristics. It was found that repeated heat treatment (normalization at a lower temperature with subsequent tempering) can significantly increase the ductility and impact toughness of the steel, even if the grain size has increased.

1/1

USSR

UDC 621.375.8

RUBINOV, A. N., BATYREV, V. A., EFENDIYEV, T. Sh.

"Problem of the Kinetics of the Generation Spectrum of Solutions of Organic Pigments"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol XVIII, No 5, 1973, pp 806-812

Abstract: A theoretical study was made of the kinetics of the generation spectrum of solutions of organic molecules in a resonator with nonselective mirrors. By solving the corresponding differential equation on a computer, the authors show that as a result of a decrease in the nonstationary losses at the initial points in time the generation frequency shifts into the low-frequency range. At later points in time a frequency shift takes place to the short-wave range which is connected with the accumulation of molecules in the triplet state and the occurrence of triplet-triplet absorption. The specific relations found for the generation frequency as a function of the pumping level and the resonator base obtained theoretically were checked experimentally.

The case of small pumpings was investigated. The pumping of the pigments was carried out by the second harmonic of a neodymium laser with modulated 1/2

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USSR

RUBINOV, A. N., et al., Zhurnal Prikladnoy Spektroskopii, Vol XVIII, No 5, 1973, pp 806-812

Q-factor. The maximum pumping energy was 0.12 joules with a duration of 30 nanoseconds. The pigment laser resonator was formed of mirrors with reflection factors of  $R_1 = 100\%$  and  $R_2 = 85\%$ . The experimental results are presented for rhodamine and potassium iodide in ethanol. The relations are discussed between increasing the resonator base and the shift of the integral generation spectrum toward the short-wave band. The nonstationary losses appearing during brief excitations have a significant effect on the spectral characteristics of the pigment generation. They cause a wavelength shift of the generation spectrum during the initial period of time and lead to the appearance of additional dependence of the generation frequency on the pumping intensity, the resonator base, and the cell length.

2/2

USSR

UDC: 621.317.619(088.8)

RASSHCHEPLYAYEV, Yu. S., BATYREV, V. A.

"A Device for Observing Stress Curves on an Oscilloscope Screen"

USSR Author's Certificate No 282458, filed 5 May 68, published 17 Dec 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A313 P)

Translation: A device is proposed for observing stress curves on an oscilloscope screen. The device contains pickups and a system of electronic switches with noncontact ring-type pulse distributor. As a distinguishing feature of the patent, the device is designed for producing stress amplitude curves with arbitrary lengthwise placement of the pickups on the object being studied. In addition, precision is improved and the frequency range is extended by including series-connected OR logic circuits with a second electronic switch circuit.

1/1

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1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--DEGREE OF LIGHT ABSORPTION IN POTASSIUM DIHYDROGEN PHOSPHATE SINGLE  
CRYSTALS -U-  
AUTHOR--(03)-AVERBAKH, V.S., BATYREVA, I.A., BESPALOV, V.O.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., RADIOFIZ. 1970, 13(2), 307-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--PHOSPHATE, SINGLE CRYSTAL, HYDROGEN COMPOUND, ABSORPTION  
COEFFICIENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1559 STEP NO--UR/0141/70/013/002/0307/0309  
CIRC ACCESSION NO--AP0125185  
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSIGN NO--AP0125185

ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. SPECTRAL CURVES WERE DETD. OF THE  
ABSORPTION COEFFS. OF K DIHYDROGEN PHOSPHATE SINGLE CRYSTALS IN THE  
WAVELENGTH RANGE 0.6-1.4 MU FOR THE ORDINARY AND THE EXTRAORDINARY RAYS.  
THE RELATIVE DISPERSION OF THE ABSORPTION COEFF. FOR THE ORDINARY WAVE  
WAS LOW. FACILITY: NAUCH.-ISSLED. RADIOFIZ. INST., GOR'K.  
UNIV., GOR'K., USSR.

UNCLASSIFIED



BAT YREVA, CIV

Hydrogeology

Article by Candidate of Physical and Mathematical Sciences A. V. Rafailova  
 L. G. Golovinskaya, Doctor of Geological Sciences, Scientific Research Center  
 of the Institute of Geology, Russian, No 5, 1973, submitted 2 July 1972, pp  
 50-57

Source: OPRS #59580  
 23 April 73  
 100-551,522,315

In sorting the analogs to the composite-kine-matic area of the natural synoptic periods, four parameters are introduced which take into account the similarity of the fields with respect to sign and direction of displacement of the basic formations. On the basis of the results of the vital sorting of the analogs, the threshold values of the parameters are determined by the Bayes method which separate the analogs analogous to the given one. The results of estimation of the sort of the analogs on dependent and independent material are presented.

The analog method is the primary method of long-range forecasting. It is widely used in operative practice. Until recently the analogs were manually sorted manually. This required large expenditures of time. Therefore, many studies were devoted to the automation of this process. At the same time there are a number of computerized procedures for estimating the degree of similarity of the meteorological fields; however, the discovery of the analogy to the composite-kine-matic process, that is, sorting the analogs to the composite-kine-matic area of natural synoptic periods is of great interest too. An objective procedure for this type of sorting was proposed in the paper by Kh. Kh. Rafailova [6].

All the characteristic features of the synoptic processes described by the composite-kine-matic maps are represented by Kh. Kh. Rafailova in the form of provisional numbers pertaining to each of the 96 squares into which the area of the field and the direction of the displacement of the basic formations. For characterization of the degree of similarity of the two composite-kine-matic maps Kh. Kh. Rafailova proposes five parameters similar to the parameters proposed earlier [2, 3] as the analogy criteria of the anomaly fields of the mean monthly temperature. These are primarily the "correlation coefficient" and

USSR

UDC 632.95

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PARSHUTIN, S. M., STONOV, L. D., ZABALUYEV, I. T., BATYRCOVA, M. SH., GALIFANOV, G. G., MULLIYEV, K. M., PAVLOVA, G. N., SHOZAM, S. H., KHRIPKO, T. V., KUR'YANOV, V. A., and KHRIPKO, V. G.

"Control of Overgrowth of Sewers and Drains in Turkmeniya"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 225-241 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N533 by T. A. Belyayeva)

Translation: The article compares the effectiveness and profitability of mechanical, manual, thermal biological and chemical methods of removing vegetation from drains. Data are given on results of herbicide tests and applications. To kill reeds, cattails and other weeds in sewers during the second and subsequent years of service, dalapon shows the greatest promise in doses of 24-30 kg/ha with the addition of wetting agent OP-7 or OP-10.

1/1

1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--EXPERIMENTAL DETERMINATION OF THE SPECIFIC HEAT C SUBV LIQUID  
CARBON DIOXIDE -U-  
AUTHOR--(03)-AMIRKHANOV, KH.I., POLIKHRONIDI, N.G., SATYROVA, R.G.  
COUNTRY OF INFO--USSR  
SOURCE--TEPLOENERGETIKA 1970, 17(3), 70-2  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--SPECIFIC HEAT, MEASUREMENT, CARBON DIOXIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1989/0752 STEP NO--UR/0046/70/017/003/0070/0072  
CIRC ACCESSION NO--AP0107294  
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HEAT CAPACITY OF CO US82 AT CONST. VOL C SUBV WAS EXPTL. DETD. IN AN ADIABATIC CALORIMETER AT 7-120DEGREES AND AT THE SP. VOL V. 1.203-2.002. ON THE ISOCHORES ABOVE THE CRIT. POINT A MIN. IN C SUBV WAS OBSERVED, WHICH SHIFTED TO HIGHER TEMPS. WITH INCREASE IN V. A SHARP MAX. IN C SUBV OCCURRED AT THE CRIT. POINT.

UNCLASSIFIED

USSR

UDC: 621.373.531.1(088.8)

BATYRSHIN, D. M., GLADCHENKO, V. N., GRACHEV, G. F., OPESKIN, V. D.,  
PANKOV, S. V.

"A Royer Generator"

USSR Author's Certificate No 267678, filed 15 Jun 68, published 5 Aug 70  
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G232 P)

Translation: This Author's Certificate introduces a Royer generator with provision for controlling the frequency of the generated pulses over a broad range. The transformer windings connected to the collectors of the transistors are shunted by a variable resistor.

1/1

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USSR

UDC: 621.396.69-762

SHABALIN, V. G., BATYRSHINA, R. F.

"Sealing Strip Junctions With Polymerizing Compositions"

V sb. Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry --collection of works), vyp. 1, Moscow, 1971, pp 46-48 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V272)

Translation: A cement composition is developed as well as a method of sealing printed-circuit strip junctions ensuring reliable operation under the effect of destabilizing factors, as well as stability of characteristics over a wide temperature range. Resumé.

1/1

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USSR

UDC 615.837.3:616.322-002.2:612.017

BATYUK, D. F., and VIZERENKO, L. V., Kiev Scientific Research Institute of  
Otolaryngology

"Some Criteria of Immunological Reactivity in Patients With Chronic Tonsill-  
itis During Ultrasound Treatment"

Kiev, Zhurnal Ushnykh Nosovykh i Gorlovykh Boleznay, No 2, Mar/Apr 71, pp 38-46

Abstract: Ultrasound is used to cure chronic tonsillitis. It has been observed that low-intensity ultrasound waves activate biological processes in the tonsils. The present study was made to examine the effect of ultrasound on the specific and nonspecific immunological activity of the palatine tonsil tissues and to determine the time when certain changes occurred. Forty patients 12-50 years old who had been afflicted for 2-15 years were included in the study; 31 patients had the subcompensated form and 9 had the decompensated form of the disease. The dynamics of the cellular composition of the contents of the tonsillar lacunae was studied. For this purpose, the patients were divided into two groups: a group of persons more than 19 years old whose cytograms showed a low lymphocyte and neutrophil content before the ultrasound treatment; the other group consisted of patients aged 12-19 whose tonsillar lacunae contained larger counts of the above species. The changes  
1/2


USSR

BATYUK, D. F., and VIZERENKO, L. V., Zhurnal Ushnykh Nosovykh i Gorlovykh Boleznay, No 2, Mar/Apr 71, pp 38-46

affected by the ultrasound treatment in both groups of patients were tabulated in detail. In the first group, the amount of epithelial cells in the lacunae was reduced and young lymphoid cells were observed. In the second group practically no change in the amount of epithelial cells was affected by the treatment. The latter caused a considerable decrease in necrobiotically altered neutrophils and an increase in the number of phagocytic neutrophils. Stimulation of immunological activity was indicated by the appearance of hemocytoblasts, blasts, and plasma cells as a result of the treatment. The authors propose that when small doses of ultrasound are applied, restoration of normal tonus and trophic function of the vegetative nervous system are produced. It is considered possible that the ultrasound waves have reflectory effect on the palatine tonsils and thereby affect the primary physicochemical processes which play a role in the interaction of receptors of the cellular shell of tonsillar lymphocytes controlling cell proliferation. According to contemporary theories, the lymphocytes are cells of immunological memory which under the action of ultrasound can produce the beginning of a new clone of this cellular population. The authors suggests that further studies are required along these lines.

2/2



1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--OXIDATION KINETICS OF 1,4,NAPHTHALENEDIOL PHOSPHATES -U-  
AUTHOR--(02)--SERGEYEV, G.B., BATYUK, V.A.   
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1399-402  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--OXIDATION KINETICS, NAPHTHALENE, ALCOHOL, ORGANIC PHOSPHATE,  
CHLORINATED ORGANIC COMPOUND, DIELECTRIC CONSTANT, COMPLEX COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/1089 STEP NO--UR/0020/70/190/006/1399/1402  
CIRC ACCESSION NO--ATO124746  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 015  
CIRC ACCESSION NO--AT0124746  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC CURVES WERE REPORTED FOR  
OXIDN. BY A COMPLEX OF IODINE WITH MECH, AT PH 6 AND TEMPS. FROM 5 TO  
25DEGREES, OF (MEC) SUB2 P(O)OR, WHERE R WAS THE GROUP OF  
2,3,DIMETHYL,4,HYDROXYNAPHTH,1,YL (I) OR ITS 2,3,DICHLORO ANALOG (II).  
THE REACTION WAS FOLLOWED BY UV SPECTRAL CHANGES. THE RATE CHANGE IN  
SOLVENTS OF DIFFERENT DIELEC. CONST. FOLLOWED THE KIRKWOOD EQUATION,  
INDICATING PARTICIPATION OF TWO DIPOLAR MOLS.; THE ACTIVATION ENERGY AND  
PREEXPONENTIAL COEFF. WERE FUNCTIONS OF THE DIELEC. CONST. OF THE  
MEDIUM. THE REACTION, WHICH RESULTS IN A SUBSTITUTED  
1,4,NAPHTHOQUINGNE, HI, AND (MEC) SUB2 PO SUB2 H, IS LIMITED BY THE RATE  
OF OXIDN. OF THE QUINOL PHOSPHATE BY THE COMPLEX.  
MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

FACILITY:

UNCLASSIFIED

1/2 023

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--ULTRAVIOLET SPECTRA AND IONIZATION CONSTANTS OF SOME QUINOL  
PHOSPHATES IN AQUEOUS ALCOHOL SOLUTIONS -U-

AUTHOR--(05)-SERGEYEV, G.B., KARUNINA, L.P., BATYUK, V.A., ZENIN, S.V.,  
SIROTA, T.V.

COUNTRY OF INFO--USSR

13

SOURCE--VESTN. MOSK. UNIV., KHIM. 1970, 11(1), 112-15

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--UV SPECTRUM, IONIZATION, HYDROQUINONE, ORGANIC PHOSPHATE,  
OXIDATION, QUINONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1995/1293

STEP NO--UR/0189/70/011/001/0112/0115

CIRC ACCESSION NO--AP0116754

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116754

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KNOWLEDGE OF THE REACTIVITY OF QUINOL PHOSPHATES IS IMPORTANT FOR THE STUDY OF THE REACTION OF CONCERTED OXIDATIVE PHOSPHORYLATION. THE UV SPECTRA OF THESE COMPS. AND THEIR PK VALUES WERE STUDIED. IN THE SPECTRA OF THE NAPHTHOQUINOL DERIVS. STUDIED, 2 DISTINCT ABSORPTION MAX. OCCUR AT SIMILAR TO 240 AND SIMILAR TO 300 NM. IN THE SPECTRA OF THE IONIC FORM, THE ABSORPTION MAX. ARE SHIFTED TOWARDS LONGER WAVELENGTHS AND THEIR ABSORPTIVITY IS HIGHER AS COMPARED WITH THE UNIONIZED FORM OF THE COMPS. A SHARP DIFFERENCE BETWEEN THE SPECTRA OF THE IONIC AND OF THE UNDISSOC. FORMS ALLOWS ONE TO DET. THE IONIZATION CONSTS. THE PK MEASURED INDICATE THAT THE COMPS. ARE WEAK ACIDS. INTRODUCTION OF 1 MORE ME GROUP INTO THE MOL. OF A METHYL NAPHTHOQUINOL PHOSPHATE LOWERS THE ACIDITY OF THE COMPD. BY SIMILAR TO 0.5 PK, WHEREAS THE REPLACEMENT OF ME GROUPS BY CL ATOMS AT THE 2 AND 3 POSITIONS SHARPLY INCREASES THE ACIDITY. INCREASED DILN. WITH ME OH (FROM 50 TO 5PERCENT) RESULTS IN ENHANCED ACIDITY (BY SIMILAR TO 1 PK). THE QUINOL PHOSPHATE OXION., ACCOMPANIED BY THE FORMATION OF RESPECTIVE QUINONES, CAN BE CONVENIENTLY FOLLOWED BY UV SPECTROSCOPY AS THE SPECTRA OF THE KETONES FORMED ARE DIFFERENT FROM THOSE OF THE REAGENTS. THE PK (20DEGREES), ABSORPTIVITY, AND ABSORPTION MAX. ARE GIVEN FOR 1,4,BENZOQUINOL DIMETHYL PHOSPHATE, 2,METHYL,1,4,NAPHTHOQUINOL DIMETHYL PHUSPHATE, 2,METHYL,1,4,NAPHTHOQUINOL DIETHYL PHOSPHATE, 2,3,DIMETHYL, 1,4,NAPHTHOQUINOL DIMETHYL PHOSPHATE AND 2,3,DICHLORO, 1,4,NAPHTHOQUINOL DIMETHYL PHOSPHATE.

UNCLASSIFIED

USSR

UDC 669.71.053.4(088.8)

BATYUK, Yu. N., SHURYGIN, G. V., and SLOBIN, P. I.

"Device for Filtrate Sampling From Pipe-Line"

USSR Authors' Certificate No 298856, Cl. G 01 n 1/10, filed 7 Apr 69, published 18 May 71 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1G119P by G. Svodtseva)

Translation of Abstract: A device for filtrate sampling from a pipe-line can be used in the production of  $Al_2O_3$  and includes a cylindrical frame with flanges and a connecting piece with open pores. In order to increase operating efficiency the connecting piece is installed concentrically inside the frame and supplied with a conical tip.

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USSR

UDC 632.95

EATYUK, V. P.

"Filler for Granulated Herbicides"

USSR Author's Certificate No 258768, filed 4 Apr 66, published 23 Apr 70  
(from *Izh-Khimiya*, No 20 (II), 25 Oct 70, Abstract No 20 B628P by P. I. FOPOV)

Translation: It is suggested that waste from the production of EHA acid (beta-hydroxynaphthoic acid) (I) be taken as filler for the manufacture of granulated preparations. The resinified polycyclic aryl carboxylic acids contained in the resin do not lower the activity of herbicides. Urea-formaldehyde resins, for example MF-17, are recommended as a binding base. An aqueous extract of I has pH 6.4, which promotes the rapid polymerization of urea-formaldehyde resins and thus prevents the formation of large lumps. Approximate composition of the herbicidal preparation is: I resin 70%, herbicide (for example, monuron) 25% urea-formaldehyde resin 5%. The high absorptive power of the new filler permits an increase of up to 50% in the herbicide concentration of a preparation.

1/1

USSR

UDC 536.081.7

BATYUTO, I. I.

"Thermal Conductivity of Condensed Dispersed Systems on a Polymer Base"

Minsk, Teplo- i Massoobmen pri Nizkikh Temperaturakh, 1970, pp 43-55

Abstract: This article is basically a summary of previous experiments and findings on the properties of low-molecular materials, which in the condensed state always depend not only on the composition and structure of the molecules but also on their mutual arrangement: that is, the structure of the body. The best example of this is phase transition during which all physical properties are changed as a result of fundamental change in the molecular configuration. Citing past discoveries, the author gives the appropriate equations and includes five schematics and two tables to describe and supplement the findings on thermal conductivity versus temperature for polystyrol mixed with various materials. The article includes eleven bibliographic citations.

1/1

USSR

UDC 547.241 + 547.391

PUDOVIK, A. N., BATYYEVA, E. S., and ZAMALETDINOVA, G. U., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Academy of Sciences, USSR

"Reaction of Trimethylsilylphosphite With O,O-Diethylacetylphosphonate"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, p 680

Abstract: Reaction of trimethylsilylphosphite with O,O-diethylacetylphosphonate in ether and argon atmosphere occurs with an exothermic effect yielding bis(diethylphosphone)methyltrimethylsilyloxymethane, b.p. 100°/0.003 mm,  $n_D^{20}$  1.4430,  $d_4^{20}$  1.1023. The structure was confirmed by NMR<sup>31</sup>P and PMR spectroscopy.

1/1



USSR

UDC 547.241 + 547.391

PUDOVIK, A. N., BATYYEVA, E. S., and ZAMALETDINOVA, G. U.

"Reaction of Trimethylsilylphosphite With 5-Benzalbarbituric Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 4, Apr 73, p 947

Abstract: Reacting trimethylsilyldiethylphosphite with 5-benzalbarbituric acid and 1,3-diphenyl-5-benzalbarbituric acid in ether and under argon atmosphere yields 0,0-diethylbarbiturylbenzylphosphonate, m.p. 159-160° and 0,0-diethyl-1,3-diphenyl-barbituryl-5-benzylphosphonate, m.p. 133-134° respectively.

1/1

USSR

UDC 547.341 + 547.235

PUDOVIK, A. N., BATYYEVA, E. S., and YASTREMSKAYA, N. V., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc. USSR

"A New Synthetic Method for Substituted 1,2-Azaphospholanes"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, pp 437-438

Abstract: 0,0-Diethyl amidophosphite reacts with the N-phenylamide of acrylic acid yielding 0,0-diethyl N-phenylamido- $\beta$ -N-phenylcarbamoylethylphosphonate, m.p. 85°, which on distillation under high vacuum eliminates ethylaniline to form a cyclic product, 2-ethoxy-1-phenyl-2,5-dioxo-1,2-azaphospholane, b.p. 157-160°/0.007 mm  $n_D^{20}$  1.5490, m.p. 71-73°.

1/1

USSR

UDC 747.341.139.31 + 547.391

PUDOVIK, A. N., BATYYEVA, E. S., IL'YASOV, A. V., NESTERENKO, V. D.,  
MUKHTAROV, A. Sh., and ANOSHINA, N. P.

"Reactions of Trivalent Phosphorus Acid Amides With p-Quinones"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1451-1456

Abstract: Reaction of N-acetamides of dialkylphosphorous acids with p-quinones has been studied. Analogously to N-arylamidophosphites the N-acetamidophosphites react easily with p-benzoquinone, chloranil, and  $\alpha$ -naphtoquinone forming crystalline addition products -- O,O-dialkyl O-p-hydroxyaryl N-acetimidophosphates. Using the EPR method, the possibility of a single electron transfer in the reactions of trivalent phosphorus acid amides with p-quinones was demonstrated going through an intermediate ion-radical formation.

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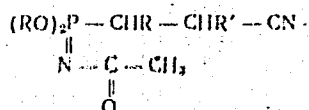
UDC 547.341.26'.118.07

PUDOVIK, A. N., BATYIEVA, E. S., NESTERENKO, V. D., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov

"A Method of Producing 0,0-Dialkyl-N-Acetimido- $\beta$ -Cyanalkylphosphonates"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 16, Jun 73, Author's Certificate No 375299, Division C, filed 27 Aug 71, published 23 Mar 73, pp 51-52

Translation: This Author's Certificate introduces: 1. A method of making 0,0-dialkyl-N-acetimido- $\beta$ -cyanalkylphosphonates of the general formula



where R and R' are hydrogen or an alkyl. As a distinguishing feature of the patent, an 0,0-dialkyl-N-acetamidophosphite is reacted with a nitrile of an  $\alpha,\beta$ -unsaturated carboxylic acid with subsequent isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that the process is carried out in an organic

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PUDOVIK, A. N., et al., Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 16, Jun 73, Author's Certificate No 375299, Division C, filed 27 Aug 71, published 23 Mar 73, pp 51-52

solvent such as benzene with the application of heat. 3. A modification of the method covered in point 1 distinguished by the fact that the process is done in the presence of an alkali metal alcoholate such as sodium ethylate as a catalyst.

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UDC 547.26'118

PUDOVIK, A. N., BATYYEVA, E. S., and YASTREMSKAYA, N. V.

"Reactions of Dialkylphosphorous Acid Anilides With Amides of  $\alpha,\beta$ -Unsaturated Carboxylic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2631-2635

Abstract: It was shown that the dialkylphosphorous acid anilides react with phenylamides and N,N'-dialkylamides of  $\alpha,\beta$ -unsaturated carboxylic acids forming O,O-dialkyl N-arylamido- $\beta$ -(N-aryl- or N,N'-dialkyl)-carbamoylalkylphosphonates. O,O-dialkyl N-arylimido- $\beta$ -N-arylcarbamoylalkylphosphonates undergo thermal cyclization yielding 2-alkoxy-1-aryl-2,5-dioxo-1,2-azaphospholanes.

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UDC 547.341.139.81 + 547.391

PUDOVIK, A. N., BATYIEVA, E. S., and GIRFANOVA, Yu. N.

"Reactions of Trivalent Phosphorus Acid Amides With Maleinimides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1696-1701

Abstract: Anilides of dialkylphosphorous acids react with maleinimides forming phosphoric ylides, i.e., the amide group proton is less labile than the proton of the heteroring, so that the stabilization of the intermediate bipolar ion occurs through the participation of this proton. N-Phenyl, N-acetyl and N,N-dialkylamides of dialkylphosphorous acids react with substituted and unsubstituted maleinimides forming respective succinimidyldiene-0,0-dialkyl-N-amidophosphoranes. It was shown that the hydrolysis of N-arylsuccinimidyldiene-0,0-dialkyl-N-arylamidophosphoranes leads to the formation of N-aryl-4-0,0-dialkylphosphonesuccinimide.

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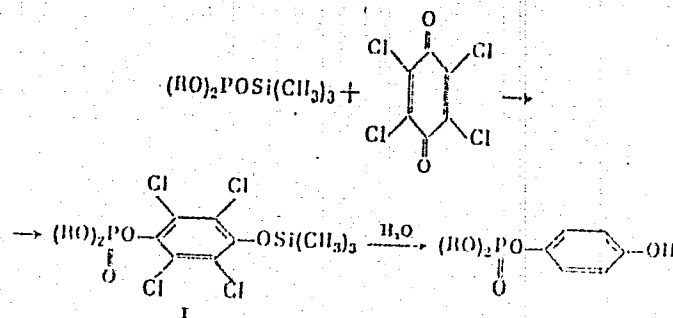
UDC 547.241+547.391

PUDOVIK, A. N., BATYIEVA, E. S., and ZAMALETDINOVA, G. U.

"The reaction of Trimethylsilyl Diethyl Phosphite with Chloranil"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, p 2577

Abstract: The title reaction was carried out with heating in anhydrous ether under an atmosphere of argon with the formation of crystalline diethyl p-trimethylsilyloxytetrachlorophenyl phosphate as follows:



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PUDOVIK, A. N., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, p 2577

The structure was confirmed by NMR of  $P^{31}$  and the hydrolysis reaction. The chemical shift from NMR was characteristic of the phosphate structure. Paramagnetic resonance spectra also indicated a signal from the protons of the  $Me_3$ .

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UDC: 547.26'118

PUDOVIK, A. N., BAT'YEEVA, E. S., AL'FONSOV, V. A., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences of the USSR

"Concerning the Reaction of Dialkyl Phosphorous Acid Anilides With Methylcarbonic Acid Chloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1235-1238

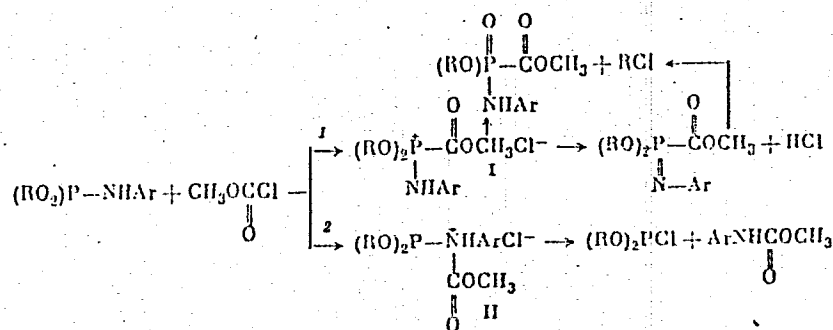
Abstract: The authors studied the reaction of secondary amides of dialkyl phosphorous acids with methylcarbonic acid chloride. Reactions of anilide, p-toluidide and p-anisidide of diethyl, dipropyl and dibutyl phosphorous acid with methylcarbonic acid chloride were accompanied by an exothermal effect with the formation of alkyl halide. The reaction of diethyl phosphorous acid anilide with methylcarbonic acid chloride yielded diethyl chlorophosphite (42%), methylcarbonic acid anilide (55%) and ethyl O-ethyl anilidocarbomethoxyphosphonate (20%). The results indicate that the reaction goes in two directions simultaneously: with initial attack of the carbon in the carbonyl group both by a phosphorus atom and by a nitrogen atom:

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PUDOVIK, A. N., Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1235-1238



The reaction through the phosphorus atom yields phosphonic derivatives, while that through the nitrogen atom yields dialkyl phosphorous acid chlorides and methylcarbonic acid anilides.

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UDC 542.91:547.1'118

PUDOVIK, A. N., ~~BATYIEVA, E. S.~~ and NESTERENKO, V. D., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc. USSR

"Reaction of N-Arylamides of Dialkylphosphorous and Diarylphosphinous Acids With Benzyl"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 72, pp 871-875

Abstract: N-Arylamides of dialkylphosphorous and diarylphosphinous acids react with benzyl forming respective imidophosphites and imidophosphonates. To 4.2 g of the diethylphosphorous acid anilide in 50 ml ether, 4.2 g of benzyl in 100 ml ether was added dropwise with stirring and in an atmosphere of nitrogen. After a 30 min reaction at room temperature, the solvent was removed, the residue was evacuated down to 0.08 mm for 30 min, to yield a light yellow liquid. In an analogous manner, diethyl- $\Delta$ -benzoylbenzyl-N-tolylimidophosphate was obtained from toluidide and benzyl. When diethyl- $\Delta$ -benzoyl-benzyl-N-phenylimidophosphate (I) was reacted with CS<sub>2</sub>, phenylisothiocyanate, m.p. 52-55° was obtained: with water (I) gave diethylanilidophosphate, m.p. 93°. The anilide of diphenylphosphinous acid treated with benzyl, followed by CO<sub>2</sub> gave diphenylanilidophosphate, m.p. 234° and  $\Delta$ -benzoylbenzyl-diphenylphosphinate, m.p. 128-130°.

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